PATENT ABSTRACTS OF JAPAN

(11) Publication number : 64-064318
(43) Date of publication of application : 10.03.1989

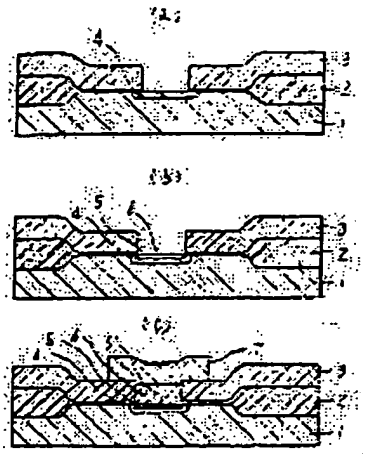
(51) Int. Cl. H01L 21/285

(21) Application number : 62-220144
(22) Date of filing : 04.09.1987

(71) Applicant : HITACHI LTD
(72) Inventor : KOBAYASHI NOBUYOSHI
SAITO MASAYOSHI
SUZUKI MASAYASU

(54) MANUFACTURE OF SEMICONDUCTOR DEVICE

(57) Abstract:
PURPOSE: To completely fill a contact hole with W by forming a tungsten silicide or tungsten/tungsten silicide film on an Si by a reaction of WF6 with the Si at the initial of the reaction, and then growing a W film by H2 reducing reaction of the WF6 thereon.
CONSTITUTION: A phosphorus glass film 3 is deposited on a thermal oxide film 2 on a P-type silicon crystalline substrate 1. Then, after 1 contact hole is formed at the film 3, As ions are implanted, and heated to form an N+ type high concentration diffused layer 4 in the contact hole. A tungsten film 6/tungsten silicide film 5 are firmed by a low pressure CVD method with WF6 and N2 on the contact. Thereafter, a tungsten film 6' is further grown on the contact by a low pressure CVD method with the WF6 and H2. Subsequently, aluminum electrodes 7 are formed. Similar result can be obtained by employing a CVD oxide film silicon nitride, BPSG, SOG, etc., instead of the film 3.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

PN - JP1064318 A 19890310
PD - 1989-03-10
PR - JP19870220144 19870904
OPD - 1987-09-04
TI - MANUFACTURE OF SEMICONDUCTOR DEVICE
IN - KOBAYASHI NOBUYOSHI;SAITO MASAYOSHI;SUZUKI MASAYASU
PA - HITACHI LTD
IC - H01L21/285

TI - Tungsten electrode burying method - by CVD of tungsten hexa:fluoride to form deposited tungsten using reaction with hydrogen NoAbstract Dwg 2/2
PR - JP19870220144 19870904
PN - JP1064318 A 19890310 DW198916 010pp
PA - (HITA) HITACHI LTD
IC - H01L21/28
OPD - 1987-09-04
AN - 1989-118503 [16]

PN - JP1064318 A 19890310
PD - 1989-03-10
AP - JP19870220144 19870904
IN - KOBAYASHI NOBUYOSHI; others:02
PA - HITACHI LTD
TI - MANUFACTURE OF SEMICONDUCTOR DEVICE
AB - PURPOSE:To completely fill a contact hole with W by forming a tungsten silicide or tungsten/tungsten silicide film on an Si by a reaction of WF6 with the Si at the initial of the reaction, and then growing a W film by H2 reducing reaction of the WF6 thereon.
- CONSTITUTION:A phosphorus glass film3 is deposited on a thermal oxide film2 on a P-type silicon crystalline substrate 1. Then, after 1 contact hole is formed at the film 3, As ions are implanted, and heated to form an N<+> type high concentration diffused layer 4 in the contact hole. A tungsten film 6/tungsten silicide film 5 are firmed by a low pressure CVD method with WF6 and N2 on the contact. Thereafter, a tungsten film 6' is further grown on the contact by a low pressure CVD method with the WF6

and H2. Subsequently, aluminum electrodes 7 are formed. Similar result can be obtained by employing a CVD oxide film silicon nitride, BPSG, SOG, etc., instead of the film 3.

- H01L21/285